**African Institute for Project Management Studies**

**(AIPMS)**

Course: Diploma in Logistic and Procurement Management

Assignment.

Module: Three

(Logistics and Supply Chain Management)

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1. **Define logistics. What are the advantages and disadvantages of logistics to an organization?**

According to the Council of Supply Chain Management Professionals (CSCMP), the preeminent worldwide professional association of supply chain management professionals, defines logistics as ‘’that part of supply chain management that plans, implements, and controls the efficient, effective forward and reverse flow and storage of goods, services and related information between the point of origin and the point of consumption in order to meet customers’ requirements.” Another short CSCMP definition is “the management of inventory, at rest or in motion.”

They also define Logistics as generally the detailed organization and implementation of a complex operation. In a general business sense, logistics is the management of the flow of things between the point of origin and the point of consumption in order to meet requirements of customers or corporations. The resources managed in logistics may include tangible goods such as materials, equipment, and supplies, as well as food and other consumable items. The logistics of physical items usually involves the integration of information flow, materials handling, production, packaging, inventory, transportation, warehousing, and often security.

**The Advantages of logistics to organizations include some of the following;**

* Provide top service: Good logistics management helps businesses deliver better service to their customers. Correct management of your company’s logistics should make you strive to improve delivery times and offer better customer service to all those who buy your products. Dealing directly with your customers gives you an advantage over competitors, but only if you give your customers what they want. Customers ask for better service, and it is your job to deliver it. To meet customer demands you need to make sure you get your supplies or products on time and that you ship out products to your customers as quickly as possible.
* Increase supply chain transparency: Greater visibility throughout your supply chain is one of the benefits of logistics management. An organization need to know what is happening at every stage of its supply chain, take a closer look at the logistics to help you understand how everything operates. You can look at historical data and analyses real-time events too, gaining insight into how things could be improved and how to prevent problems. You could make some significant savings by monitoring your supply chain, as well as delivering better service to your customers and any business partners.
* Improve efficiency and reduce costs: Whether an organization is dealing with logistics in the locally or international freight logistics, you can improve efficiency and reduce costs with good management. Better supply chain transparency makes it easier to spot where you might be going wrong, as well as the aspects that your company is doing right. You can identify cost saving measures and keep your expenses lower by keeping a close eye on how everything is managed. Gain more control over both domestic and international freight, whether it’s ingoing or outgoing, for greater efficiency and bigger savings.
* Greater revenue: Boost the organization revenue by improving the organization’s logistics management. If your company provides a better service to your customers, you can attract more business. Improve your brand’s reputation by delivering on your promises, never having to turn a customer away or let them down. With greater productivity, you can do more with your time, allowing your business to handle more orders than ever before. People want a quick and accurate service from a company that does what it says it will do.
* One point of contact: Simplicity in your supply chain is one of the largest benefits to bundling services. When you need a project done, need to fill specific orders quickly or make changes to existing products or services, one customer service rep will be able to help you throughout the entire project from warehousing, to distribution to transportation. Having this simplicity helps to finish projects quickly, accurately and efficiently! Many of Murphy’s customer service reps have been working with the same customers for years and know how the accounts operate on a daily basis.
* Consistent service levels: Having a single partner for supply chain and logistics work means no surprises when it comes to service levels. Whether you are working with a large ongoing project or a short-term increase in product levels, you know how the job will be done. If projects are bounced from third-party logistics to third-party logistics or handled in-house, service levels can vary and the work is not done consistently for you or your customers.
* Improved pricing: When more than one service is provided by a third-party logistics, pricing can become more efficient and economical throughout the entire supply chain. Full service providers can effectively price projects because they know exactly when inbounds will be received, items will be picked and trucks will be at their doors, making for a much more efficient process.
* Flexibility: Working with a single third-party logistics provider brings flexibility to the supply chain in a couple of different ways. The ability to increase or decrease square footage and the amount of handling required, while only paying for what you use, is one of the main benefits of using a third-party logistics. Having a full service third-party logistics provider handling the entire supply chain also gives you flexibility to use specific services when you need them. Say a large retailer picks up your product and boxes need to be re-labeled, or your product’s online sales take off and you need e-commerce fulfillment services with a full service third party logistics, these jobs can easily be done without the hassle of re-warehousing or switching providers.
* Partnership mentality: For us here at Murphy, we strive to embody the partnership mentality with our clients. From high quality customer service to process improvements and innovation, we want each of our clients to have the most effective supply chain possible! Working with a full service third-party logistics provider brings improvements to every aspect of the product life cycle from pre-production raw materials to finished goods ready to move on to their final destination. If you would like to hear about how we can help your supply chain contact us, we would love to share more with you! With efficient storage methods, reliable trucking and brokerage transportation and rail services such as unloading and loading boxcars, coordinating drayage and utilizing our state of the art indoor rail tracks, Murphy's full service logistics solutions can help you simplify your supply chain!
* Reduces burden of back-office management: On the surface, the logistic function appears to be simple: sending physical packages from point A to point B. However, before each consignment is sent out on transit, there is paperwork, auditing and verification to be conducted and documented.3PL outsourcing service providers will have the necessary backend personnel and systems in place to take care of these procedures. From assigning, a dispatch note and carrying out physical verification, to ensuring that all shipping papers are in order, logistics outsourcing can take care of the routine activities, sparing time for the business to focus on other priorities.
* Economies of scale: third-party logistics players usually have a globally distributed network of carriers and fleets, which allow them to reach any destination with ease. Since the function is outsourced, it is easy to scale up or scale down the logistic reach of the business without having to set up owned infrastructure and personnel.
* Real-time visibility of inventory: Professional logistic outsourcing service providers use ERP systems or cloud-based Warehouse Management Systems to help track inventory on a real-time basis. This data can also be received from the service provider on a regular basis for supply chain management planning.
* Expert documentation handling: Logistics, especially cross-border logistics, requires adherence to sophisticated paperwork. For a business that has logistics only as a small function or department, this can be a tedious job to do on a routine basis. Logistics outsourcing service providers have the domain expertise and knowledge to take care of all kinds of paperwork involved like inter-connected carrier contracts, insurance certificates, bill of lading, certificate of origin, etc.

**The disadvantages of logistics to organizations include some of the following;**

* Outsourcing without proper appraisal process: A good logistics partner is hard to find. The appraisal process itself will include gathering quotes and doing quality reports to check if the provider meets benchmark standards and so on. Rushing through the tender process without adhering to a well-thought process will lead to hassles in the future.
* Choosing a low-pricing vendor for cost-benefit: An after effect of rushing through the logistic outsourcing vendor process is that you end up signing the deal with someone who offers the lowest rates. As Sun Tzu, the legendary military leader once said, “The line between disorder and order lies in logistics. Outsourcing the function to a low-priced vendor who cuts corners might actually create chaos rather than an orderly logistics function. There is a reason why top-notch third-party logistics players charge a premium rate. It costs a lot to have personnel and processes in place to ensure perfect paperwork, timely coordination of carriers, warehouse management and much more.
* Not specifying roles and responsibilities in writing: Logistics is a subset of supply chain management, which by itself is a combination of several micro-steps. This increases the complexity in logistics planning and implementation. Unless the roles, responsibilities and tasks of each party take the form of an explicitly written a Service Level Agreement (SLA), there could be serious complications when the process kicks into action.
* Not viewing logistics outsourcing as a strategy: Logistics plays a key role in the overall strategy of an organization. Moreover, the business environment and customer demands are not what they used to be a few years ago. E-commerce, mobility, on-demand services and other advancements, have reformed the commerce landscape. If you are outsourcing logistics merely as a function to be done with, and not as a strategic element, then the business is not going to gain much despite the economy of scale.
* Disconnect between clients & outsourcing agents: Does your logistic outsourcing agent really know what you are trying to do? Is it last mile delivery that your focus is on or faster delivery than the competition? A lack of consensus between the parties can lead to a waste of resources and lead to cost overruns and delayed deliveries.
* Mismanaged Implementation: Changing a supply chain management system takes financial investment, time, and human resources. If not implemented properly, there will be wasted labor, service redundancy, and missed deadlines that result in significant costs.

To avoid these unnecessary costs, high-quality logistics providers always complete a thorough analysis before implementing changes to the supply chain. This ensures that they fully understand the client’s freight schedule, consolidation opportunities, and last-mile logistics needs before developing and implementing a new system.

* Inadequate Training: Integrating a new system into a working supply chain is complex and often requires restructuring and team-member training. This process must include detailed planning and clear, meaningful communication, or it could result in costly mistakes and excessive employee turnover. If searching for logistics providers, always inquire about the training process and the usability of their tools and technology. An experienced provider should start with a clearly defined onboarding or transition process that can then be customized to fit unique teams and timelines.
* One & Done Mentality: Shortsighted logistics providers (focused on ‘getting the contract’ and nothing more) miss consolidation opportunities and other ways to improve their clients’ supply chain efficiency. The initial savings are realized, but any additional savings or growth opportunities are neglected. A company that relies on this type of provider will eventually fall behind their competitors and may not even realize why. Industry-leading logistics providers focus on continual analysis. They are always looking for new ways to reduce their clients’ supply chain expenses or improve frequency and effectiveness
* Extensive Training and Planning required: supply chain management connects with Just-In-Time inventory to increase efficiency and decrease waste in modern industry. However, implementing supply chain management takes extensive planning and training, often more than a company anticipates. For the system to work, companies that are part of the supply chain must complete the training before implementing a supply chain management system. A company’s supply chain management implementation can fail because of a lack of sufficient training for employees and a lack of understanding by management of how complicated implementation can be. The expense of training and implementation also can cause top management to give less than full commitment to supply chain management in an attempt to save money, which can reduce or eliminate its bottom line impact.
* Inaccurate Info Wreaks Havoc: supply chain management depends on supply chain management software, but too often different parts of the supply chain are working on different software programs, preventing a seamless integration. The software is meant to forecast parts distribution needs, but if the information entered isn’t accurate, neither is the forecast. Employees bypassing the supply chain management system to manually manage ordering and inventory with fax machines and spreadsheets also can plague the system. If the training isn’t enough to make employees comfortable, using the system, then the system only gives an incomplete picture of a supply chain’s status. Enterprise resource planning software is meant to integrate all of the company’s information into a single application, which benefits supply chain management applications by having a single source for up-to-date information. ERP software, however, is expensive and difficult to implement as well.
* Lack of Strategic Implementation: A 10-year research project conducted at Australia’s University of Melbourne discovered that supply chain integration clearly benefited successful businesses, yet its adoption was not widespread. Adoption occurred more in response to short-term pressures rather than because of strategic planning and long-term goals. The report concluded that implementation of supply chain management “often lacks cohesion, strategy and forward thinking. Instead, managers focus on local, short-term business benefits for their own organization, rather than on strategic supply chain integration."
* Lean Supply Chains are Vulnerable: Supply chains are lean by design. Larger inventories were more expensive to house, but they did create a buffer for unexpected events. If surprise demand for a product occurs due to an unpredictable trend, a supplier could run out of stock of a vital part, resulting in production delays and wasted resources as a manufacturer waits on a supplier or attempts to find a new one.

1. **Why should an organization use Just in Time? Give its advantages and Dis disadvantages.**

According to manufacturing tomorrow.com article (2017), Just-in-time (JIT) inventory is a stratagem that manufacturers utilize to increase efficiency and decrease waste by receiving goods only as they are needed in the manufacturing process, thereby reducing the cost of inventory. Importantly, manufacturers must forecast their requirements accurately.

* Reduce Inventory Costs: Using a Just-in-Time inventory system reduces the amount of material on hand in the production facility. Companies can reduce the cost to store, maintain excess inventory, and eliminate the risk of materials becoming obsolete while in storage. High inventory quantities tie up company funds, which could otherwise benefit other areas of the business such as the research and development of new products. With the reduction in inventory costs, companies can expand and grow their businesses.
* Lead Time Reduction: Just-in-Time manufacturing also uses a pull system to move materials through the production cycle. For example, in a manufacturing business, materials do not move to the next step on an assembly line until that step or station is ready. This reduces the stockpiling of unfinished product at any stage in the production process. When the company eliminates bottlenecks, production speed or lead-time is faster. Process engineers must determine the maximum quantity any station in the production process can have waiting. While workers may sit idle waiting to move production to the next step, the process is more efficient.
* Efficient Manufacturing Layout: Companies must create a layout on the production floor to move materials through the process efficiently. Some companies must move workstations closer together to eliminate steps in the work process. This leads to a more efficient manufacturing layout that can significantly reduce lead-time. Building products efficiently is a primary focus for a company implementing a lean manufacturing system.
* Improve Customer Satisfaction: Companies implement a Just-in-Time system or lean manufacturing to satisfy the demands of customers. The voice of the customer is always present in a Just-in-Time manufacturing environment. Reductions in lead-time and costs can help a company deliver a product to the customer faster and for a lower price.

**The following are some of the advantages of using Just in Time for organizations according to manufacturing tomorrow.com article (2017),**

* Waste Minimization - Arguably the most significant benefit of the system, lean manufacturing can efficiently minimize waste within a production facility. As companies sit on large sums of inventory and waste, this process eliminates outdated or aged inventory. Along with waste minimization, the process also reduces cost within the operation as well.
* Enhanced Customer Relationships - Instead of solely focusing on the needs of all consumers, lean focuses mainly on loyal consumers. This is how you are able to build strong and reliable relationships with trusted customers and keep a steady flow of revenue coming in.
* Lean Infrastructure - A lean infrastructure means only dealing with several components: building, tools, supplies, equipment, and labor to fulfill near-term inventory demand. The facility does not waste any space within the operation and enables the facility to come as close as it can to production efficiency.
* Smooth production flow: One of the key features of the JIT system is a uniform production process. From the arrival of materials from suppliers to the delivery of goods to customers, the JIT system aims to prevent fluctuating production rates, which can result in delays and excess work-in- process inventories.
* Pull-method: The pull-method contributes to this smooth production process, and it is a key feature of the JIT system. Under the pull-method, goods are produced in each stage only as they are needed at the next stage. This system eliminates work-in-process inventory between production steps, thereby reducing waiting times and associated non-value-added costs. The pull-method also prevents wastage due to the production of defective products, since the output at every stage of production is inspected before passing on to the next stage.
* Reduction in storage and waiting time: Under the JIT system, materials are purchased and goods produced only as required, rather than to build up stocks for future use. This alleviates the need to make space for holding products and materials, and results in less time wasted waiting for large amounts of materials and products.
* Relatedly, the JIT system encourages faster setups of production machinery. Producing small lots of product only as required demands a faster set up of machinery, resulting in more efficiency and reduced costs. The result is higher quality raw materials and finished products.
* Maintenance of equipment The JIT system requires strict adherence to routine maintenance schedules. Effective, preventive maintenance of equipment will allow the company to avoid costly down time from machine breakdowns.
* Employee satisfaction and stronger relationships: The JIT system also encourages multi-skilled workers, flexible facilities and an atmosphere of teamwork. These things improve the production system to help the company maintain a competitive edge by seeking ways to improve its products, achieve more efficient operations, and eliminate non-value-added costs.
* The JIT system also encourages stronger relationships between suppliers and producers. Under the JIT system, communication and information flow between the supplier and producer are open, supporting strong supply coordination. These relationships are enhanced by long-term contracts.
* Automated purchasing: Under the JIT system, if materials are required, the supplier will receive an electronic message to deliver them. This improves efficiency and reduces time wastage. Automated purchasing also means that existing inventory levels and production levels are calculated automatically, making things easier and more efficient.
* Reliable vendors: Under the JIT approach, suppliers are limited. This reduces the amount of time spent on vendor relations, and ensures that the firm is working with only reliable suppliers who can deliver high quality goods on time.
* Long-term benefits of a JIT system: A long-term concentration on production growth and supply requirements, and synchronizing changes in raw materials specifications with suppliers, provide many long-term benefits to the business. The JIT system can produce long-term benefits like cost savings, lower production costs and better customer satisfaction.

**The following are some of the disadvantages of using Just in Time for organizations according to manufacturing tomorrow.com article (2017),**

* Equipment Failure - Lean has very little room for error. Equipment or labor failure can lead to major inconsistencies within lean and can make the entire operation fall behind. In other mass production facilities, employees could just move over to another machine if one went out. In lean, there are not many other places for employees to move to, because everything within the operation is being utilized.
* Delivery Inconsistencies - In correlation with equipment failure, this drawback in production enables delivery inconsistencies. This disadvantage of lean can hinder customer relationships, push consumers toward competitors, and cost you revenue.
* Difficulty with Surprise Extra Business: One of the biggest just-in-time business disadvantages is a lack of flexibility when it comes to good fortune. In most businesses, a customer coming in and wanting to order a massive amount of products is a good thing. For a T-shirt company with a new school account, it can mean making the new client wait longer than he wants to just to get a complete order. Small businesses cannot afford to turn down windfalls, but it can be next to impossible to find enough raw materials on short notice to take care of those profitable new customers.
* More Planning and Training Required: Many small businesses do inventory and materials ordering by hand using paper and pencil, at least in the beginning. Even those large enough to need or want a computer inventory program do so with simple apps. In most cases, it is enough to take inventory a couple of times a month, just to keep track of what you'll need. In these cases, inventory is a simple process and can be easily taught to any employee in a short amount of time.
* With a JIT inventory system, the entire inventory process is more complex. Employees must be trained to take highly detailed inventory on a very frequent basis. Accuracy is crucial because the entire ordering system for the company is based on those numbers. Employees will need to learn to use elaborate computer systems, which can be challenging for those who are not familiar with the computers installed in the office. In order to train and keep employees who can handle these inventory duties, you may have to increase labor costs. In addition, you will need to find suppliers who are willing to work with you by delivering supplies multiple times each week without adding exorbitant delivery charges to each order. It is also a smart practice to create relationships with lesser suppliers for emergency supplies in case of a break in the inventory/delivery process.
* A Tight Supply Chain Means less Control: Most small business owners are proud of their ability to pivot and to change things up quickly when the economic forces around them call for it. With just-in-time inventory systems, it is much more difficult to do this. A neighborhood bakery will generally know when the local celebrations will happen and will order accordingly. However, if the baker finds out that a new wedding planner is looking for an emergency supply of fancy cupcakes, she has little chance of stepping up and reaching out for the job.
* Problems with Natural Disasters: Tornados, hurricanes, floods and other natural disasters can have a huge impact on any business, as can civil unrest or police actions. The difference with just-in-time inventory systems is that the effect can be felt much more harshly. The danger is not only what happens when emergencies arise near the business, but also when they happen in other areas where a business's supplier happens to be.
* The Need for Higher IT Investments: Just-in-time inventory systems are so complex that they are virtually impossible to utilize without a computer and dedicated programs. Companies will need inventory tracking, order creating, sales predicting and a host of other programs to make this system work properly. This means a large investment in both hardware and software plus training time for management and employees. There will be extra labor costs, extra supervisory duties and more time needed for inputting data.
* Necessary Reliance on One Supplier: Setting up a JIT system requires creating relationships with major suppliers who will deliver the weekly raw materials a business needs. While these business ties can be a benefit to any company, there are downsides to this arrangement as well. A pizza restaurant owner who relies on one restaurant Supply Company has the advantage of knowing how much she will pay for pepperoni and flour each week, making it easier to control food costs. On the other hand, she is limited in her ability to look around at her supplier's competitors to see what prices they offer for the same products. If a supplier across town is offering pepperoni for half price that week, she cannot simply place a single order before going back to her steady supplier. She can change suppliers, but there is no way to simply shop around to find the best prices each week. The same problem happens if the supplier decides to raise prices. The pizza shop owner is stuck paying the higher prices until she can find a similar supplier that offers better prices and who is willing to work with her on her ordering schedule. Either way, JIT inventory severely cuts a business owner's ability to find the best cost for raw materials on a timely basis.
* Problems with Customer Satisfaction: When just-in-time inventory systems work, they work well. However, when these systems break down, businesses can suffer on multiple fronts. Lack of inventory means loss of business, but that is only the immediate effect. Dissatisfied customers who cannot get what they want or who have to wait longer than usual to have their orders fulfilled are a real problem in today's business environment.

1. **Can supply chain management be used as a competitive advantage by an organization? Give 5 reasons well explained.**

According to John T. Mentzer, Executive Director, Integrated Value Chain Forums, University of Tennessee article (Jan 04, 2007), Effective logistics and supply chain management can provide a major source of competitive advantage in today’s marketplace. Put very simply, either successful companies have a cost advantage or they have a value advantage, or – even better – a combination of the two.

Cost advantage gives a lower cost profile and the value advantage gives the product or offering a differential ‘plus’ over competitive offerings. In practice, what we find is that successful companies will often seek to achieve a position based upon both of these advantages. With five different logistics and supply chain management tools, companies have the potential to achieve a position of both cost advantage and value advantage over their competition.

* The essence of assortment planning and item categorization. Most business organizations find that the range of products that they offer to the market has a tendency to grow rather than reduce. The rate of introduction items seems to outpace the rate at which existing products are eliminated. The general effect of this mushrooming is to extend the ‘long tail’ of the Pareto distribution (i.e. more C items than A items). In retail: Typically as more variants are added to the range the demand per variant will reduce with a subsequent impact on forecast accuracy leading to large inventory buildup.
* Effective procedures for supplier evaluation: Many people are probably familiar with having a combative relationship between suppliers and vendors, which can lead to all variety of problems. Furthermore, the size of the supplier base can add to supply chain complexity by increasing the number of relationships that need to be managed, as well as increasing total transaction costs. The harsh reality is that it makes no difference in which business sector you are. Suppliers and vendors play a key role in your company’s success (and generally, you are stuck with them). Having a formalized system in place to track and evaluate supplier and vendor performance can be effective in achieving superior customer value at less cost. It also opens the door for higher level of collaboration with your supplier.
* Performance measurement and communication: It is often said that performance measurement shapes behavior. Often these measurements are based upon departmental budgets and are underpinned by objectives such as cost minimization, productivity improvement etc. Whilst the face value of these objectives may appear desirable, in reality, they are not necessarily helpful in achieving superior customer value at less cost, for example, high turnover can lead to increased number of stock outs. In the past, the focus in performance measurement was primarily on efficiency, i.e. lower costs, better use of capacity reduced inventories and so on. They are still worthy goals but the priority has shifted. Today the challenge is to create strategies that enable to you to become the supplier of choice.
* Building a framework for Exception Management: Today’s marketplace is characterized by higher levels of turbulence and volatility. The wider business, economic and political environments are increasingly subjected to unexpected shocks and discontinuities. As a result, supply chains are vulnerable to disruption and, in consequence, the risk to business continuity is increased.
* One way of dealing with this and minimizing risk is to build a framework for an effective exception management. This can also be of enormous help in dealing with complexities in product range mushrooming that we discussed before.
* Simply put, the main purpose of Manage by Exceptions reporting in logistics and supply chain management is to bring to the attention of the managers statistically relevant anomalies in the data. If this done effectively it can greatly reduce the workload and enable managers/buyers to spend their time more effectively in areas where it will have the most impact.

1. **What are inventories? How important are they to an organization?**

According to Neil Kokemuller; (April 13, 2018), Inventory is a current asset on your company’s balance sheet. More important, it is a major part of your ongoing business operations. For manufacturers, inventory includes raw materials used to make and assemble products. For resellers, it includes products you acquire to resell to customers. In either case, you need inventory to earn revenue.

Inventory is a necessary evil that every organization would have to maintain for various purposes. Optimum inventory management is the goal of every inventory planner. Over inventory or under inventory both cause financial impact and health of the business as well as effect business opportunities

* Meet variation in Production Demand: Production plan changes in response to the sales, estimates, orders and stocking patterns. Accordingly, the demand for raw material supply for production varies with the product plan in terms of specific SKU as well as batch quantities. Holding inventories at a nearby warehouse helps issue the required quantity and item to production just in time.
* Cater to Cyclical and Seasonal Demand: Market demand and supplies are seasonal depending upon various factors like seasons; festivals etc. and past sales data help companies to anticipate a huge surge of demand in the market well in advance. Accordingly, they stock up raw materials and hold inventories to be able to increase production and rush supplies to the market to meet the increased demand.
* Economies of Scale in Procurement: Buying raw materials in larger lot and holding inventory is found to be cheaper for the company than buying frequent small lots. In such cases, one buys in bulk and holds inventories at the plant warehouse.
* Take advantage of Price Increase and Quantity Discounts: If there is a price increase expected few months down the line due to changes in demand and supply in the national or international market, impact of taxes and budgets etc., the company’s tend to buy raw materials in advance and hold stocks as a hedge against increased costs. Companies resort to buying in bulk and holding raw material inventories to take advantage of the quantity discounts offered by the supplier. In such cases the savings because of the discount enjoyed would be substantially higher that of inventory carrying cost.
* Reduce Transit Cost and Transit Times: In case of raw materials being imported from a foreign country or from a faraway vendor within the country, one can save a lot in terms of transportation cost buy buying in bulk and transporting as a container load or a full truckload. Part shipments can be costlier. In terms of transit time too, transit time for full container shipment or a full truckload is direct and faster unlike part shipment load where the freight forwarder waits for other loads to fill the container, which can take several weeks. There could be many factors resulting in shipping delays and transportation too, which can hamper the supply chain forcing companies to hold safety stock of raw material inventories.
* Long Lead and High demand items need to be held in Inventory: Often raw material supplies from vendors have long lead running into several months. Coupled with this if the particular item is in high demand and short supply one can expect disruption of supplies. In such cases, it is safer to hold inventories and have control.

1. **Why is planning essential in logistics and supply chain management?**

According to Exforsys (May 10, 2010), Supply chains are networks. They are networks of facilities, people and distribution options whose primary purpose is procurement and transformation of goods so that can then be delivered and distributed to potential customers. Supply chains can be pictured as arteries that supply business or organizations its industrial life. Disrupt a supply chain and you will find business or organizations gasping for breath and clinging to dear life.

* Planning improves Efficiency: Networks are interconnected and interdependent. One is connected to the other in a peculiar relationship and one is dependent on the other in a peculiar kind of relationship. Strategic planning then is important in the supply chains. Elaborate plans have to be made in such a manner as to let the peculiar relationships in the supply chain network flourish and be in constant harmony.
* Supply chain networks are three-network things: the supplier, the manufacturer and the distributor. While planners may call the supplier, the supply manufacturer or distributor, it still refers to the same thing. This three-network relationship forms part of the supply chain. All supply chains follow the same three-network design or a variation of the three-network design.
* Planning is important to supply chains, first, because it improves efficiency. The key word is Speedier. Planning how to get the raw materials or supply, planning where to get it, planning when to get it, planning an efficient procurement system all contributes to the goal of efficiency. If you cannot get your supply faster, the manufacturing aspect of the network might slowly stop, waiting for the raw materials. This will be a costly episode in business or organizations. The strategic planner then ought to design a speed equation. How to make the supply faster, where to get the supply faster, when to get the supply so that it will arrive faster are key questions for the planner. Strategic planning must improve efficiency; it must make the supply chain Speedier.
* Planning improves Economy: The need for speed is just part of the supply chain equation. A speedier delivery will not produce a strategic advantage for business or organizations if it cannot get the supply cheaper. The key word is Cheaper. It would be very absurd to have the supply delivered fast if in return it becomes more expensive. This would be a disaster to business or organizations. Collectively, speed and price should go hand in hand in the supply chain to create a strategic advantage. The question of how, where and when to procure supply in the fastest way, now has to be tempered with how, where and when can we get it the cheapest. The strategic planner must be able to incorporate such into the plan. A supplier might be able to get if fast but will the cost still justify it? A supplier might be able to get supplies cheap but will the speed justify it? These basic questions can affect the strategic plan.
* Planning Improves Expectation: Another factor that improves the supply chain network and creates a strategic advantage is the identification of and the transacting with manufacturers or outsource manufacturer who are able to transform the goods that have been delivered fast and cheap into finished products or partially finished goods. The key is better. If business or organization can transform the supply, that has been delivered fast and cheap, into finished products, then the strategic plan should involve in-house manufacturing. However, if an outfit out there can do the job better and probably cheaper, then it is always the rational way to do business. Strategic planning improves the expectation of business or organizations. They can now decide who will do the process better, and not regret in some future date.
* Planning Improves Evolution: People do evolve, so does the product. Evolution and change is another key factor that must be incorporated in strategic planning. Lifestyle changes and patterns affect product evolution and product delivery. The key is Better and better. The strategic planner has to visualize how lifestyle changes and patterns affect product delivery. Years ago, a large segment of the working class worked regular 40 hour weeks Monday to Friday. That is not so true today. Many still work 40-hour weeks or more but on different shifts and in different locations. The 24/7 establishments evolved to cater to these lifestyle change and pattern. From the initial grocery stores that started to open 24 hours a day, 7 days a week, now comes the high-end stores, gyms, entertainment arcades and a host of other industries.
* Supply chain strategy calls for an evolution in the delivery and distribution to ensure everyone gets everything they need in the exact time. If there has to be delivery and distribution at 1:00 in the morning, business or organizations must evolve to answer this end-user need. Neglect it and others will do the evolution for you and you might be on the verge of extinction. Doing things better and better must be a passion that the strategic planner must not forget to consider. This passion must be present not only in product design, in product manufacturing but in product delivery as well.
* Strategic planning is extremely important in supply chains. It may spell the difference between healthy business or organizations, or business or organizations that have contracted a life threatening disease. Supply chains are lifelines; strategy must be able to keep them alive and well.

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